

UC Santa Barbara/Los Alamos National Lab Conference, Monday Sept. 29th 2025.

Schedule South Hall 6635, UC Santa Barbara

On Zoom: Zoom: [bjornbirnir](#)

Opening remarks by Professor Björn Birnir (9am)

Session 1

9:00-9:30 UCSB Carlos Garcia-Cervera: Hartree-Fock Theory with a Self-Generated Magnetic Field

9:30-10:00 LANL Ruian Ke: From small noisy to big biased data: modeling and inference during pandemic crisis under data constraints

10:00-10:30 UCSB Xu Yang: Analyzing PINNs for Approximating Boltzmann Equations and Their Asymptotic Preserving Properties

Coffe break 10:30-10:45

Session 2

10:45-11:15 LANL Ruy Ribeiro: Using mathematical models to understand viral dynamics and biology

11:15-11:45 UCSB Ruimeng Hu: Mean-Field Actor-Critic Flow: A Reinforcement Learning Algorithm for Mean-Field Games

11:45-12:15 UCSB Paul Atzberger: Generative Adversarial Learning Approaches for Stochastic Modeling and Simulation

Lunch 12:15-1:00

Session 3

1:00-1:30 LANL Avadh Saxena: Interplay of Curvature and Topology in Bio-Nano Materials

1:30-2:00 UCSB Katy Craig: Optimal Transport and Particle Physics

2:00-2:45 UCLA Andrea Bertozzi: Subgraph Matching and Machine Learning for DNA-Aptamer Design

2:45-3:15 LANL Christa Brelsford: Heterogeneity and Risk in Urban environments

Coffee 3:15-3:30

Session 4

3:30-4:00 Panel on Undergraduate Research:

Maria Isabel Bueno, Carmen Molina-Paris, Karel Casteel, Björn Birnir (**UCSB and LANL**)

4:00-4:30 UCLA Tom Chou: Evolution of Structured Populations: From Cells to Organisms

4:30-5:00 UCSD Natalia Komarova: Mathematical modeling of evolutionary dynamics with biomedical applications

5:00-5:30 UCSD Dominik Wodarz: TBA

6:30 Dinner at a local restaurant